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An eight year followup study of 300 randomly selected newly-registered students at the General College of the University of Minnesota is presented. The aim of the study was to determine the worth to student and taxpayer of extending higher education to those of lower-than-average college abilities. Interviews concerning academic abilities, vocational interests, and attitudes were held with participants during their stay in school. Questionnaires were mailed to those who had left. Followup letters were sent in 1966 to all 300 original participants, of whom 194 returned the requested information. A descriptive profile of the General College student emerged. Motivation is a prime factor in the success or failure of the students, calling for continual reevaluation of the curriculum and instructional methods in order to meet student needs and interests. Students in the survey were almost equally divided among those who might be considered academic and vocational successes, and those whose goals apparently were initially too high for possible success. The author suggests that in addition to curriculum evaluation, the College staff undertake in the very near future a second long-term study of student accomplishment. (CJ)

UNIVERSITY OF MINNESOTA

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THE GENERAL COLLEGE FIVE-TO-TEN-YEAR FOLLOW-UP STUDY

Of the many research projects undertaken by the General College in its continuing efforts to maintain a curriculum relevant to student needs, few have had the scope of the one which forms the basis of this issue of The General College Studies. The General College Five-to-Ten-Year Follow-Up Study was deliberately designed and begun as an ambitious project. The material described here is part of the results of a program of research that began in the fall of 1958, when a random sample of 300 new students was identified for long-range study. Since the initial interview at the beginning of their General College residence, the former students involved in the study have been contacted at regular intervals through the years. The data collected and compiled in the course of the project give a picture of the General College student of the late fifties and of former students after their departure from the General College.

As the attached report makes clear, the principal object of the Follow-Up Study was to collect two kinds of data: descriptions of vocational, family, and educational experiences of people who were General College freshmen in 1958; and evaluations by the same people relating to the impact of their General College experience on their lives. It is the latter aspect of the resulting composite picture that forms the main thrust of this report. Future issues of this journal will be devoted to other results of the Follow-Up Study.

The general reader of this report--even though he may not be particularly interested in the account of the techniques employed in a complex, longitudinal study--should take note of the conclusions that the study's data seem to suggest. Particularly significant is the emergence here of what is becoming increasingly clear to all segments of higher education, namely, the desirability of consultation with students--and former students--through continuing dialogues, and the necessity of a concurrent effort on the part of higher education to maintain "its pertinence to the needs of the students it serves."

Introduction

The student body of the University of Minnesota's General College comprises a unique student group in American higher education. Because of its relationship to the other undergraduate colleges of the University of Minnesota, its population by all academic criteria constitutes a more homogeneous group. While students of comparable academic ability (insofar as it can be indicated by high school accomplishment and by performance on scholastic aptitude tests) can be found among the freshmen in any four-year institution which admits students regardless of their high school rank and their aptitude test scores, almost all of those who enter the General College have ranked in the lower half of their high school class. And though the majority of the students enrolling in junior and community colleges have high school records comparable to those of General College students, a sizable minority among them have higher high school ranks and higher aptitude test scores.

It becomes readily apparent that while the mix of the General College population is singular, the individuals comprising it are in terms of academic potential typical of a large minority of the students to be found in freshman classes enrolling eacy year at many of the colleges and universities across the land. It is desirable to learn all we can about the students in this segment of our educational populace because of their numbers and because theirs is the greater insecurity and danger as they run the gamut of higher education. Does college provide them with the knowledge, the skills and the insight to function with additional effectiveness and confidence when they depart from the campus? Though this study has not provided an emphatic answer to this sweeping question, it does suggest some inferences about the worth--both practical and intangible--of higher education to those students who have hazarded the dangers of academic shoals despite the warnings, either implicit or explicit, they have received prior to their enrollment in college that they run appreciable risks of getting hung up on them.

Just what is the worth of higher education to students who have ranked in the lower half of their class while attending high school? This is a moot question among educators and laymen alike, not just in the United States but throughout all of those countries with a sufficient degree of economic

development to be able to provide higher education for any appreciable number of those young people who seek it. In the United States a majority of its citizenry appears to believe that all secondary school graduates, regardless of class rank, should have the opportunity to go to college. This conviction is implicit in the taxpayers' collective willingness to establish educational facilities--particularly community and junior colleges--for the burgeoning numbers of young people, many of whom cannot gain admission to that growing number of colleges and universities that are raising admission standards as applications swell more rapidly than they can augment their educational plants and hire additional faculty.

To that minority group of taxpayers who oppose expenditures to offer higher education to the less academically successful, the majority offers various rebuttals, two of which are almost universal. The first is cultural: educational opportunity for all who desire it is traditional in this country; implicit in this response is the conviction that additional formal education makes possible further self-realization. The second is economic: this nation's broad educational base contributes to its affluence; without maximum educational opportunities the country could not expand--perhaps not even maintain--its economic leadership in the world. Either argument, of course, is accepted or rejected on faith. Existing evidence that higher education promotes self-realization and raises the standard of living for all who attend college, regardless of academic aptitude, remains inconclusive.

It would be gratifying to be able to declare that the eight-year study designed and conducted in the General College[1] has brought forth sufficient evidence to remove these points of faith and doubt respecting universal education entirely from the realm of conjecture. Unfortunately, the evidence from the study is not so clear cut that it can support a claim so categorical and sweeping. Not all those students who entered college from high school with a less than average record deemed eight years later that they had benefited appreciably from their higher educational experience. Nor did the evidence gainsay their judgment. On the other hand, a substantial number of them found college rewarding and gave evidence in proof of its worth.

The debate over universal education will continue; this study will not close it off. But it and others to follow it can supply the specific evidence required to make the debate more precise.

It is patent that the designing of the study and the gathering and collating of the information were tasks requiring the perception, insight and hard work of many individuals. Though the staff members named in the footnote cited in the preceding paragraph have been the chief conceptualizers and prime movers in the project, they are aware that the project could not have been seen through to its completion without the cooperation of almost every member of the staff of the General College between 1958 and 1966. Uncounted hours of staff time were given over to preparing and conducting the study. Furthermore, most of those hours comprised voluntary labor, since no special funds were available for the study. Quite literally, the students who took part in it and the faculty members who conducted it made this study possible by the generous gift of their own time.

Design and Scope

In September, 1958, the student personnel office of the General College gathered a random sample of 300 names from among the students registering in the College for the first time. The sample was stratified to include transfer students from other colleges and freshmen just beginning their higher education.

These 300 students were informed about the purpose and design of the study at the time of their enrollment. Each of them was interviewed during his first quarter of residence. Those remaining in the College throughout the year were interviewed again near the close of spring quarter, 1959. Those still enrolled in the College during spring quarter, 1960, were interviewed for the third time. At the same time those participants who had transferred to another college or had dropped out of school in the intervening quarters were questioned by mail concerning educational and vocational plans.

Between 1960 and 1965 the student personnel office succeeded in maintaining an up-to-date address list on almost all of the 300 participants. The list made it possible for the dean of the College to send each of them a letter in 1966 explaining the follow-up in the study and inviting their continued cooperation. Many of them returned the post cards enclosed with the letter and indicated their willingness to take part in the final stages of the study. By spring, 1966, 194 of the original 300 students had completed

the Strong Vocational Interest Blank, had filled out the follow-up questionnaire, and had returned the vocational interest blank and the questionnaire to the student personnel office.

The information collected over the eight-year period 1958-66 limns forth a clearly defined composite image of this representative group of General College students. Their educational and social background on entering the University of Minnesota; their educational and social experience while attending the General College and other colleges within the University or institutions of higher learning other than the University; their experiences in establishing themselves as householders, parents, workers and taxpayers after leaving college: these have been documented and can now be described with considerable accuracy. In addition to revealing the experiences of this group of students typifying the population of the College at a particular period in its history, the data make clear their attitudes and assumptions--as well as shifts in those--at given points throughout the eight-year period.

Though the scope of the study is impressive for its breadth (of information) and length (in time), those who have seen it through to completion are acutely aware of its flaws and limitations. If they were to undertake another study of this kind, they would make changes both in design and procedure.

Since the study was designed and conducted for the purpose of gathering descriptive information, the data can substantiate only a descriptive report. On the basis of the evidence, no comparison between students in this sample and students outside of the General College population can be made. Whatever inferences one may draw must be kept tentative in view of the absence of any comparative data. For example, one might conjecture that the description presented in this report would serve as an appropriate description for approximately four-fifths of the junior college students in Minnesota or for about half of the students admitted to a four-year college which admits all applicants who have completed their secondary school education. But in the absence of comparative data in support of it such an hypothesis could not be tested.

Description of the Participants

The stratified random sample of the participants in the eight-year study was comprised of 220 men and 80 women. Two-hundred and sixty-five of these students were admitted to the General College as beginning freshmen in

September, 1958; the other 35 were transfer students from other colleges of the University and from other educational institutions. Eighteen of these 35 students entered the College after having been dropped by another college because of low grades. Though the 17 other transfer students had not been dropped by the first institution they had attended, they had marginal academic records and had been denied admission to one of the other colleges of the University. Unlike the 265 beginning freshmen, not all of the transfer students had ranked in the second half of their high school class. Each of them, however, had got off to a less than auspicious start in college.

Eighty per cent of the participants resided in Minneapolis or St. Paul or one of their suburbs and, with few exceptions, lived at home while attending the University. Over half of these commuters (43 per cent of all of the participants in the study) lived in Minneapolis. The other commuters were almost equally divided between St. Paul and the suburbs of the Twin Cities; 19 per cent of all the participants lived in St. Paul and 18 per cent lived in the suburbs. Of the 20 per cent whose permanent residences were from beyond the Twin Cities area, 17 per cent were Minnesota residents and just 3 per cent were from outside the state. A larger proportion of the men than of the women came from beyond the Twin Cities area to attend the College. Eighteen per cent of the men were from outlying communities and 4 per cent were out-of-state residents; 14 per cent of the women were Minnesotans from beyond the Twin Cities area; just one of the women was an out-of-state resident.

Not at all surprisingly, since the level of education has been rising for each succeeding generation in this country, the majority of the students who took part in the study already had matched or surpassed their parents' educational experience when they entered the University in September, 1958. Twenty-eight per cent of the parents of the men and 35 per cent of the parents of the women had attended a post-secondary educational institution. On the other hand, 35 per cent of the parents of both the men and the women had terminated their formal education after graduating from high school; and 32 per cent of the parents of the men and 22 per cent of the parents of the women had completed at least 8 but not more than 11 years of schooling. Though 1 per cent more mothers than fathers had started college (29 per cent of the mothers as compared with 28 per cent of the fathers), more fathers than mothers completed baccalaureate and/or graduate or professional degrees

(11 per cent of the fathers as compared with 8 per cent of the mothers).

Attitudes Toward Higher Education, the University and the College

Most of the 300 students taking part in the eight-year study were pleased with their initial experiences in the General College and were optimistic about their future in higher education. Their satisfaction and optimism appears somewhat surprising because 67 per cent of them, when asked in November, 1958, why they had enrolled in the General College, stated that they had done so because they had no alternative; they had failed to gain admission to some other college in the University of Minnesota. Though 32 per cent of them said they had experienced disappointment at learning they would have to enter the General College if they came to the University, after they had been in attendance for several weeks 82 per cent of them said that their feelings about the College were favorable. Eleven per cent stated that their response to it was neutral, and just 7 per cent regarded it negatively. Among the dissatisfied, 5 per cent were disappointed with their courses, 1 per cent found the work too demanding, and 1 per cent had concluded that higher education was "a waste of time."

In fact, at the outset there were more students happy about being in the General College than there were parents happy about having them there. When queried about their parents' responses upon learning that they would have to attend the College, 53 per cent replied that their parents were pleased that they had been admitted to any unit of the University and 13 per cent said that their parents had evinced disappointment because they had to attend the General College. It would seem that in the eyes of students and parents alike the College gains some prestige by being an integral part of the University of Minnesota. Forty per cent of the participants in the study said that when they had learned that they would be attending the General College, their initial reaction was one of relief at being admitted to the University at all.

At this early stage in their academic careers a majority of them regarded the College as a means to an end--a stepping stone to a four-year college. Fifty-five per cent of them indicated in November, 1958, that they had no intention of earning the two-year Associate in Arts degree. Eighty-four per cent among this majority group declared that they planned to transfer to a four-year college before completing the requirements for a two-year

degree; and of the 45 per cent minority group who intended to earn the two-year degree, slightly more than one-fourth planned to transfer to a four-year institution after graduating from the General College; they wanted the degree because it would represent a tangible step in their pursuit of a four-year degree. Only 14 per cent indicated intentions of earning the Associate in Arts degree as evidence of minimal (and probably terminal) academic accomplishment. Nor did many of the students begin their careers in higher education with the intention of entering one of the non-baccalaureate vocational programs offered at the University. Just 8 per cent of them were enrolled in such a program, and only one in four among this group wished to earn the two-year degree. The others planned to stay in the General College just long enough to complete the requirements for a vocational certificate.

By the end of their third quarter in the College (May, 1959) they had not altered their attitudes appreciably toward either their educational experiences or the College. Seventy-five per cent of them still were pleased with the College and the educational opportunities it had afforded them--a drop of only 7 per cent in the six months' period since November, 1958. The percentage of those dissatisfied with their higher educational venture had risen correspondingly from 7 per cent to 14 per cent, and the percentage of those relatively indifferent to their experience remained unchanged at 11 per cent. Neither had the attitudes of their parents undergone a pronounced change. Forty-nine per cent believed that the year of higher education had been "of value" to their sons and daughters, whereas in the preceding September 53 per cent had been pleased that their offspring had gained admission to the University. Obviously, the events and experiences of the freshman year had matched the expectations of students and parents alike. They contemplated the future with optimism.

The immediate future, as they viewed it in May, 1959, would be given over to the continuance of their education. Fifty-seven per cent of them expected to return to the General College in September, 1959; 12 per cent were undecided as to whether they would return; and 31 per cent did not intend to enroll in the College in the coming year. However, just one student in four among those who were undecided or had no intention of registering in the College again expected to terminate or interrupt his educational career at the close of the freshman year. The others believed that they would be

transferring to some other college within the University of Minnesota or to another educational institution. Of the students who declared their intentions to transfer out of the College at this time or during the next year, 84 per cent expected to be admitted to another unit of the University of Minnesota, 10 per cent expected to enter some other college or university, and 6 per cent had not decided where they would attend school in the coming academic year.

Since 91 per cent of the students planned to return to the General College or to transfer elsewhere, it appears reasonable to conclude that by and large they took a sanguine view of their possibilities for realizing their educational goals. Nor can it be assumed that all of the other 9 per cent were intending to abandon further educational objectives. Just slightly more than 2 per cent, in fact, were leaving school because they were completing a one-year terminal vocational program. Of the slightly less than 7 per cent who were leaving school for a variety of other reasons (chief among these being entry into military service and full-time employment), many intended to return to the University at a later date.

A year later (May, 1960) these robust hopes had become somewhat battered by the rough fortuities of two years of academic experience. Six quarters of higher education had tended to narrow the academic alternatives available to them. Most of those whose grades had made them eligible for admission elsewhere had already transferred out of the College--in most instances at the end of their freshman year. Yet the strong desire of those still in the College to earn a four-year degree and their resilient conviction that they could do so are surprising and impressive. They stand as implicit testimony to the enduring quality of hope and a heroic indifference to unfavorable odds. Forty-four per cent of them when asked their plans for the 1960-61 academic year, still said that they would probably transfer to a four-year college; and 26 per cent planned to return to the General College--many of them with the hope that they might yet improve their grade averages and gain admission to another college.

Seventy-seven per cent of these students who had been in the College for two years indicated that they would not be making application for the two-year Associate in Arts degree in June, 1960. One's first inference might be that most of them did not value that degree very highly. Reinforcing that inference would be the previously mentioned evidence that the primary objective

of most of them was a four-year degree. But there would still remain this question: why would they not take the degree as a secondary objective, especially in view of the fact that no four-year college had admitted them after two years at the University?

Whatever their feelings as to its worth, the fact is that a large majority of those completing their second year of college had not yet completed the requirements for the degree. Seventy-five per cent fell somewhat short of the 90 credits they needed to qualify for it, and 3 per cent had yet to pass the comprehensive examination. Just 6 per cent had taken the degree already, and 8 per cent still hoped to transfer without taking it. Quite obviously, a sizable majority of the students enrolling in the College for two full years (six academic quarters) carry somewhat less than an average of 15 credits each quarter.

Though still buoyed by hope, students remaining in the College at the close of the second year of the eight-year study did not cavort and splash with the light-hearted sense of well-being and satisfaction that they and their now transferred companions had demonstrated during their freshman year. Upon weighing their frustrations one cannot but sympathize with them as they find more to fault and less to praise in their experiences with higher education. Many found themselves at an impasse. The collegiate setting had not supplied them with the kind of challenge to which they could or would respond. Their best talents were not for the skillful handling of those mathematical and/or verbal symbols essential to average or above average academic accomplishment. From their vantage point the most that could be said--and that, understandably, grudgingly--was that they had had the chance to go to college. If they had chosen to fix the blame for their frustrations after two years in the General College upon the College itself, it would have been understandable; for the need to find a scapegoat when thwarted is universal.

But judging from their own evaluation of their experience, one has to conclude that these students felt that their two years had proved more rewarding than frustrating. When asked what feature of their experience in the General College had been of greatest value to them, 54 per cent replied that they valued most highly the courses (one or more of them) that they had taken, and 35 per cent answered that the advising and counseling they had received had been of most worth to them. On the other hand, when asked what

single aspect of their educational program had been of least value, 28 per cent answered that they had found little or no value in one or more of the courses they had taken, and 15 per cent said that the advising and counseling services of the college had been of no significant worth to them. Only 4 per cent said that no feature of their experience during their two years in the College had proved outstanding, whereas 29 per cent stated that they could recall nothing to complain about during the two years.

On balance, it is clear that at this stage in their careers these students were looking back upon their educational experiences with somewhat more favor than disfavor. As a group they were neither disgruntled nor enthusiastic. While many indicated that they planned to go on to earn a four-year degree, one wonders if they were not beginning to have doubts about realizing this objective. The novelty and excitement of the collegiate life reflected in their responses during their freshman year must have given way to a more sober mood as they approached that point in their lives at which most of them would have to enter the world of work and make a place for themselves in the economic and social environment beyond the campus. For most of them this critical moment must have been tinged with pronounced disappointment, since it necessitated the acceptance of more modest goals than they had initially conceived for themselves.

Yet few of them looked back on their years at the University as time vainly spent. Just 8 per cent said that they were aware of no sense of achievement while they had been at the University. Thirty-three per cent said that their greatest sense of achievement had stemmed from their academic accomplishments while in the General College. (This last figure seems particularly remarkable when it is recalled that these were for the most part students who had not earned grades qualifying them for transfer to another college.) The remaining 30 per cent gave a wide variety of responses, all of which indicated some positive sense of accomplishment as a result of attending the University.

In 1966, when asked what their most important reason for attending the General College had been, 47 per cent replied that they had entered it to prepare for transfer to a four-year program; 29 per cent, to get a basic general education; 18 per cent, to plan and/or train for a vocational education. The remaining 6 per cent gave responses so numerous and varied that they cannot aptly be categorized. When asked if attending the General College

had helped them to accomplish their objective, 61 per cent answered yes and 39 per cent no. When asked if they would change their purpose if they could start over, 34 per cent said yes and 66 per cent no. In brief, the College had served as the means to the realization of a preconceived objective for about two-thirds of these former students.

Less than two-thirds of them, however, had favorable memories of the College. In 1966 the barest majority, 51 per cent, remembered their past feelings about it as having been positive ones. Nor had their attitudes softened appreciably with the years. Just 55 per cent indicated that their current sentiments regarding it were favorable. Twenty-seven per cent characterized their existing attitude toward the College as neutral, and 18 per cent declared that they had negative feelings about it.

Their composite attitude at the end of the eight-year period is much less favorable than it had been during November and May of their freshman year. It will be recalled that in November, 1958, over four-fifths of them had characterized their attitude toward the College as positive, and in May, 1959, exactly three-fourths had said that their reaction to it was a favorable one.

In the opinion of these former students their parents' views on the College by 1966 were more favorable than their own. They thought that 69 per cent of the parents had been pleased with the educational experiences of their offspring, that 24 per cent had neutral feelings about it, and that only 7 per cent had been disappointed.

What accounts for the fact that almost one-fifth of these students had negative and slightly more than one-fourth of them neutral attitudes toward the College at the close of the eight-year period? Though no dogmatic conclusion appears warranted, it seems likely that the College stood as the immediate symbol of their unrealized ambitions. When it is remembered that this group of students came to the University after less than average accomplishment in high school, it seems remarkable that a majority of them found their collegiate academic experiences more rewarding than frustrating. But that an appreciable minority saw thwarted those aspirations which had prompted them to enter the University cannot be doubted. When asked in 1966 what factors had prompted their withdrawal from the University, 42 per cent of those who had failed to establish and realize an objective responded that lack of interest in pursuing an education, uncertainty about their educational

goals, and/or dissatisfaction with their academic accomplishment had been responsible for their departure. Perhaps it is not a mere fortuity that this figure is just 3 per cent less than the total percentage characterizing their attitude toward the College as either neutral or negative.

Surprisingly, the University of Minnesota itself does not bear a comparable burden of negative and neutral sentiments. When asked in 1966 to characterize their past feelings about the University, 84 per cent responded that their attitude toward it was favorable. Just 11 per cent expressed neutral and a mere 5 per cent expressed negative feelings toward it.

The sharp differences in attitude toward the College and the University prompt speculations which, though they cannot be evaluated precisely in this study, nonetheless cannot be wholly ignored. To just what extent does any college in any large university serve the role of scapegoat for the students attending it? Is it not probable, for instance, that students in the other schools and colleges of the University of Minnesota tend to find more to criticize in their school or college than in the University itself? Furthermore, is there a direct relation between academic success and satisfaction with the school or college in which it has been achieved? Finally, how would the 84 per cent of the students in this study have felt toward the University if they had been denied admission to any of its classrooms; and how would the 69 per cent of their parents who were favorably disposed toward the General College have felt toward the University if their sons and daughters had been denied admission?

Academic Persistence and Accomplishment

The academic commitment and accomplishment of the participants in the study reveal marked differences. A number of them have proved extremely persistent in their pursuit of higher education. In the fall of 1966, 9 per cent of the men were still enrolled at an educational institution; another 31 per cent planned to take additional courses, either in day or night school. Just 2 per cent of the women were still taking course work; 12 per cent of them hoped to return to the classroom at a later date. By 1966, 28 per cent of the men--as compared with 8 per cent of the women--had earned a bachelor's degree.

Only 15 per cent of the women who transferred elsewhere remained in college for three or more years following their departure from the General

College; however, 43 per cent of the men continued their education for three or more years subsequent to transferring to another college. Since there were no significant differences in their measurable academic aptitudes or in their academic achievements either in high school or in the College, this evidence tends to buttress the frequently held assumption that men experience stronger social and economic pressures to acquire a higher education and the diploma which stands as symbolic proof of it.

Because they comprise such a small proportion of the total enrollment of the College and because so few of them have taken degrees, no analysis of the women's academic persistence and accomplishment will be set forth in this study. To facilitate the analysis of the men's performance they will be divided into four groups: (1) those men who did not take a degree, (2) those who took a two-year degree, (3) those who took a two-year and a four-year degree, and (4) those who took a four-year degree.

(1) Forty-nine per cent of the men did not complete the requirements for a degree. The number of quarters the members of this group spent in residence in the General College ranged from one to seven. The average period of residence in the College was 3.2 quarters per student--just slightly more than one year. Their grade point averages ranged from 0.5 to 3.5 (4.0 = A). The grade point average for the group was 1.5, midway between D (1.0) and C (2.0).

(2) Twenty-three per cent completed requirements for a two-year degree. Their periods in residence ranged from four to nine quarters. The average period was 6.9 quarters per student. Their grade point averages ranged from 1.7 to 3.3. Their overall grade point average was 2.2--slightly above C.

(3) Eight per cent completed the requirements for a two- and a four-year degree. Their residency in the General College ranged from five to eight quarters. The average per student was 6.9 quarters. Their grade point average while in the General College was 2.5.

(4) Twenty per cent completed the requirements for a four-year degree. Their residency in the General College ranged from one to seven quarters. Their average residency was 4.6 quarters. Their grade point averages ranged from 2.0 to 4.0. The overall grade point average for the group was 2.8.

Vocational Goals and Accomplishments

By the fall of 1966 most of the individuals who had taken part in the eight-year study were married, had begotten one or two children, reported an annual income exceeding $8,000, were employed in work that they found satisfying, and believed that their higher educational experience had been of practical worth. That is, they felt that it had helped them to secure more desirable employment. They thought too that their years in college had brought them intangible benefits. In their opinion, during those years they had gained in self-assurance--extended their awareness and insight--and they attributed much of this sense of growth to their collegiate environment.

Whatever attitudinal changes they underwent, it must be emphasized, were subjective and internal. No evidence indicating a shift in their religious, political, economic or aesthetic values can be cited to substantiate them. To the contrary, they indicated almost unanimously that their religious convictions remained the same after college as they had been prior to it, that their political ties were divided almost evenly between the two major parties before and after college, that their economic and vocational aspirations (despite some realistic modifications) continued basically unchanged, and that their cultural interests (the kinds of music they listen to, the television programs they watch, the movies and plays they attend, the literature they read) had not changed significantly as a result of attending college. In fact, the evidence makes it clear that the participants in the study did not at any time regard the University or the College as an environment where they might examine and appraise values and perhaps recast some of them in the light of newly discovered information. Most of them saw higher education as a means to an end, an essential step on the way to a vocation.

Such an attitude, of course, is not a new one among college students. Just as students in the medieval universities studied Latin because it was the language of the clerical, medical or legal vocations to which they aspired, students now pursue a general education because it is required of them as the precursor to a profession--be it engineering, business, law, pedagogy or the clergy. The chief objectives of most of those who took part in the study were status and income; and they were confident that the surest route to realizing them led through the classroom.

With the exception of business (and each year its more exclusive realms become less likely to be excepted) one can hardly attain admission to the professions without one or more academic degrees. The large number of students who come to the General College aspiring to professional status are aware of this fact; also they recognize, though often dimly through a haze of fantasy and rationalization, that the odds against their gaining the requisite degrees and admission to the profession of their choice are formidable. But for various reasons--familial and peer-group values and expectations are usually numbered among them--they elect to buck these odds. They cannot resign themselves to what they consider a lesser vccational goal. If they could, they would be more inclined to enter non-baccalaureate programs in the General College, in a junior college, or in a post-secondary vocational and technical institute. However, just 8 per cent of the students in this study came to the College intending to take one of its terminal vocational sequences. And seven-eighths of that 8 per cent were women.

These generalizations, it must be emphasized, pertain more to the men than to the women. It is clear that most of the women do not share in the men's yearning for professional careers with their attendant status and income. Ample evidence is extant outside this study that women who compete with men for professional status are the exception, not the rule, in our society. It would be an inappropriate digression to contend at length here that the cultural role of women in our society is primarily one of dependence on, rather that competition with, men. However, there are indications in this study that women who attend the General College are in the main not competitive with men. Few women sought or entered career positions. And those few who did, chose those careers which are least competitive with men, such as primary-school teaching, dental assisting and secretarial and clerical employment.

Among these, it will be noted, only teaching requires a baccalaureate degree. The others can be prepared for in vocational programs. None among the women who acquired a four-year degree went on to earn an advanced degree, but 24 per cent of the men who completed a four-year degree or its equivalent also hold a graduate or professional degree. Clearly, a significant minority of the individuals in this study--especially among the men--demonstrated academic achievement far in excess of what might have been expected of them on the basis of their high school records.

But it is equally clear that many of them--and this statement too pertains especially to the men--came to the University with occupational goals which would prove to exceed their grasp. The exigencies of time and experience would ultimately cause these students to shift their sights to targets they could reach. Usually they obtained employment in the original occupational area of their choice but at a lower level in that area than they had contemplated upon entering the University. For instance, those originally planning careers in business management often shifted to business detail or sales work; those setting out to be engineers frequently became technicians. In fact, business detail, sales and technical work comprised the employment in 1966 of 70 per cent of the men. Though almost without exception they aspired to positions at the professional, management or skilled levels in the fall of 1958, just 57 per cent had realized these levels of employment by 1966. Twenty-six per cent were engaged in semi-skilled employment and 13 per cent held positions classified as unskilled.[2]

When they entered the College in 1958, the men who had participated in the study evinced interest in such broad vocational categories as human services (e.g., law, medicine, dentistry, teaching); business (e.g., management, accounting, wholesale and retail selling); production (e.g., research, design, assembly); transportation (e.g., airline piloting, truck driving, railroad engineering, equipment maintenance, dispatching, freight handling). While many of the women shared the men's interest in careers in the human services, many of their job classification interests differed from those of the men. They tended to be attracted by careers requiring shorter periods of formal education (e.g., nursing instead of medicine and dental assisting instead of dentistry). Those women who aspired to careers in business, by and large, had modest goals; they expected to hold clerical or secretarial positions. At the outset it seemed apparent that most of the women had not entered college hoping to prepare themselves for lifelong professional careers. Nor did they; in 1966 so few of them were in career positions that no analysis of their vocational goals and achievements was made.

Since many of them had re-evaluated their career objectives over the eight-year period, it is surprising to find that 72 per cent of the men in 1966 expressed satisfaction with their current employment. Twenty-eight per cent of them stated that the position they were holding "truly represents what I have wanted to do" and 44 per cent said that it "approximately

represents what I have wanted to do". Nineteen per cent considered their employment acceptable, though they were not enthusiastic about it. Two per cent rated their job as "just tolerable", 5 per cent regarded theirs as "unsatisfactory and unrewarding", and 3 per cent said they found their work undesirable and wished they could leave it for more congenial employment.

Not at all surprisingly, these who are most satisfied with their employment have in most instances made better grades and gained more degrees, are earning larger incomes and holding more prestigious employment.

Among the 28 per cent holding a job that "truly represents what I have wanted to do", 2 per cent earned advanced degrees, 7 per cent earned bachelor's degrees, 7 per cent earned associate degrees and 12 per cent did not gain a degree. The mean grade point average of this group was 2.0 and the reported mean annual income for 1966 was $8843. Twenty-six of the 28 per cent are in professional, managerial or skilled positions.

Among the 44 per cent holding a job that "approximately represents what I have wanted to do", 15 per cent earned bachelor's degrees, 8 per cent earned associate degrees, and 21 per cent did not gain a degree. The mean grade point average of this group was 2.0 and the mean annual income for 1966 was $8522. Thirty-two of the 44 per cent are in professional, managerial or skilled positions.

Among the 19 per cent holding a job which they considered acceptable but which they were not enthusiastic about, 3 per cent earned bachelor's degrees, 6 per cent earned associate degrees, and 10 per cent did not gain a degree. The mean grade point average for this group was 1.9 and the mean annual income for 1966 was $6736. Seven of the 19 per cent are in managerial or skilled positions.

Among the 10 per cent who found their jobs either just tolerable, unsatisfactory and unrewarding, or undesirable, 1 per cent earned a bachelor's degree, 3 per cent earned an associate degree, and 6 per cent did not gain a degree. The mean grade point average of this group was 1.8 and mean annual income for 1966 was $7100. Just 1 per cent of the 10 per cent is in a skilled position.

Conclusions

The evidence of this study will not substantiate many categorical conclusions. It is mixed evidence—so evenly mixed that each who sifts it is likely to evaluate it according to his temperament: the pessimist will be

inclined to dwell on how much less the accomplishment of the students amounts to than everything, the optimist how much more it amounts to than nothing. Since just a little over half of the participants in the study earned a two-year and/or a four-year degree, the pessimist and the optimist will be about equally right--or wrong.

In relative terms, however, the optimist is closer to the realities of higher educational experience. It will be recalled that none of the students who began their academic careers in the General College did so with a high predictability of success; they entered it because their below-average high school records had kept them from gaining admission to the college of their choice; and those few who came to the College from another unit of the University or from another institution of higher education, did so because they had been dropped by the first one because of low grades. In brief, all of the participants in the study found themselves in the position of having to earn higher grades in the future than they had in the past if they were to succeed as college students.

And as previously observed, a bare majority did just that. The 51 per cent who earned the two-year degree or its equivalent maintained grade point averages higher than those originally expected of them; and the 28 per cent among them who were stubborn enough to earn a bachelor's degree demonstrated that the so-called below-average student can shape adverse probabilities to the contours of his will. Clearly, if he is strongly motivated and receives compatible instruction, the student ranking below the fiftieth percentile in high school can realize his objectives in college.

At least one conclusion appears clear-cut. Though the instructional and counseling personnel of the College have served students well, the evidence of the study gives no justification for complacency. The gloomy critic's implicit idealism ought to be heeded: however intimidating the difficulty of realizing it, the objective of helping all students to benefit more fully from their higher educational experiences must be pursued with additional skill and energy. For complex reasons, doing this will not be easy. The most thwarting problem, that of motivation, is one over which educators have extremely limited influence. Much as they may wish to, they can contribute only a part of the motivation so essential to every student's success--and a relatively small part by comparison with the contributions of all the other institutions and their representatives impinging on students' lives.

When he comes to college, a freshman is no longer analogous to the putative bear cub, ready to be licked into shape. For good or ill, much of the crucial shaping has occurred prior to his matriculation.

If more of its students are to derive additional fulfillment from their years in college, the General College must extend its capacities for making education meaningful to them on an individual basis. For just insofar as each student can find valid congruencies between his experiences in college and the roles he has known or aspires to assume outside the University will he discover significance in his collegiate experiences. To strengthen such correspondencies the College will have to individualize its instruction and counseling to an even greater degree--an imposing challenge to an institution with a student-teacher ratio exceeding 30 students to one teacher. But the challenge can be met despite the high student-teacher ratio. If a curriculum is geared to the realities of the social and economic milieu beyond the campus and if instructional techniques and strategies are kept pertinent to the curriculum, the significance of learning can become more visible to students, its processes more highly personalized.

Hence it is important that the curriculum of the College be subjected to a steady evaluation and revision appropriate to the maintenance of its pertinence to the needs of the students it serves. And while the faculty should have the final responsibility for changes in the curriculum, the opinions of the students themselves should be sought by means of questionnaires and interviews (as was done in this study) and weighed in determining additions to and revisions in the curriculum. Fortunately, a tradition supporting such curriculum change is already extant. Since its founding more that a quarter of a century ago the College has had an experimental, free-choice curriculum subjected to constant evaluation and steady modification.

Accompanying this evaluation and revision of curriculum have been experimentation and evaluation in instructional methods. Experimental laboratory methods have been tried and evaluated in biology and geology as much out of the necessity to overcome the handicaps of too small a budget and too little space to provide for conventional laboratory facilities and supplies as out of an interest in experimentation. Nor has the laboratory method of instruction been confined to the sciences. All sections of freshman composition (as many as 900 students a quarter enroll in them) are taught as writing laboratories, and courses in the visual and plastic arts are offered

in the art laboratory. The College was prompt in availing itself of the chance to offer closed-circuit television instruction and to participate with the University's Bureau of Institutional Research in the evaluation of such instruction. Currently the Natural Science Division of the College is engaged in experimenting with and evaluating audio-tutorial instruction in the sciences.

Like curriculum evaluation and change, experimentation with methods of instruction should be pursued as a means to an end, not as an end in itself. Just as curriculum modification can strengthen the nexus between college and the society of which it is a part, teaching methods which spur students' active involvement in the processes of learning tend to personalize and motivate the further pursuit of learning. In the light of the evidence of this study it is recommended that the staff of the College (1) lend additional energies to its evaluation of curriculum and (2) undertake in the very near future a second long-term study of student accomplishment.

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[1]The study was initiated by Dr. G. Gordon Kingsley, head of student personnel services in the General College. In addition to him, the principal researchers have been Drs. Frank T. Benson, David L. Giese, Leslie A. King, George J. McCutcheon and Thomas G. Scheller.

[2]Here are some representative examples of jobs to be found in the general employment categories referred to in the above paragraph: 1) professional: lawyer, dentist, college teacher; 2) management: sales manager, advertising administrator, educational administrator; 3) skilled: airline pilot, librarian, social worker; 4) semi-skilled and unskilled: file clerk, janitor, trucker.